DAYVILLE MILLS HYDROELECTRIC FACILITY, POWERHOUSE
North side of Rt. 101, .5 miles west of Rt. 395
Killingly
Windham County
Connecticut

HAER No. CT-145-B

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

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HAER No. CT-145-B

Location: North side of Rt 101,
.5 miles west of Rt 395
Killingly
Windham County
Connecticut

USGS Danielson, CT quadrangle
Universal Transverse Mercator Coordinates:
19.260040.4636640

Engineer/Architect: Unknown

Date of Construction: c1925

Present Owner: William Prym, Inc.
PO Box 5028
Spartanburg, SC 29304

Present Occupant: Summit Hydropower, Inc.
92 Rocky Hill Road
Woodstock, CT 06281

Present Use: Unused

Significance: The Dayville Mills Hydroelectric Facility powerhouse was built c1925 to provide the Dayville Mills Complex with electrical power to drive textile machinery. The powerhouse includes a free standing brick building, headgate, penstock, turbine, generator, and governor all of which were retied from service c1962 and survive in 1993. The original powerhouse was built c1858 but does not survive in 1993.

In 1858 Sabin L. Sayles and Harris C. Sayles of Pascoag, RI, built a textile mill building in Dayville. In the mid 1800's the area was characterized by an influx of out of state firms moving in and expanding the textile industry.

In 1883 a 50 foot by 200 foot 4-1/2 story brick structure was erected by the Sabin L. Sayles Co. This woolen goods manufactory became the principal

industrial institution in the village of Dayville. In 1993 the building stands vacant.

Project Information: The Dayville Mills are eligible for inclusion on the National Register of Historic Places. In compliance with Article 406 of its Federal Energy Regulatory Control license No. 11168, Summit Hydropower, Inc. documented the extant hydropower facilities in 1993 prior to project rehabilitation. Summit Hydropower, Inc. plans to rehabilitate the extant hydropower facilities during 1993 and 1994 by performing minor repairs to restore the facilities to their original design.

SUMMARY DESCRIPTION OF POWERHOUSE

The Dayville Mills Hydroelectric Facility powerhouse was built c1925 to harness the water of the Five Mile River and provide the Dayville Mills Complex with electrical power for its textile machinery. The powerhouse replaced an earlier powerhouse installation built c1858 which does not survive. Following is a description of the powerhouse and its ancillaries all of which were retired c1962 and survive in good condition in 1993:

Headgate - At the extreme downstream end of the pond system there exists a concrete headgate structure built c1925 which controls flow from the ponds into the penstock. The headgate structure incorporates a single wooden slide gate measuring 7 feet wide by 7 feet tall operated by a cast iron rack and pinion operating mechanism.

Penstock - Connecting the headgate structure to the turbine in the Powerhouse is a 6 foot diameter by 42 feet long round riveted steel buried penstock built c1925.

Powerhouse - The powerhouse which was built c1925 consists of a 1 story rectangular independent structure with a brick superstructure and a concrete substructure. The superstructure measures 16 feet wide by 23 feet long by 15 feet tall. It's wooden hip roof has asphalt shingles. It's four windows and double door have brick segmental arches and brick sills. The concrete floor is at ground level and it supports the generator, exciter and governor equipment. The concrete substructure

measures 16 feet wide by 23 feet long by 20 feet tall. It houses the turbine, hydraulic pump and governor motor equipment. The powerhouse protected the equipment such that the original equipment substantially exists as it did when it was retired from service. The average operating head available at the powerhouse is 14 feet.

Turbine - The turbine is a vertical Francis cylinder gate type residing within a 8 foot diameter by 6 foot 8 inch tall cylindrical riveted steel pressure case built c1925. There are no nameplates or markings on the turbine. However it is believed to be a 27 inch left hand Type-D Holyoke Hercules having a serial number of 235 and built by the Holyoke Machine Company, Holyoke, Massachusetts. At 14' of head this turbine was rated at 120.0 horsepower, 89.00 cubic feet per second (cfs), and 191 rpm.

Generator - The generator is a directly connected General Electric synchronous vertical type rated at 180 rpm, 125 kVa, 120 amps, 3 phase, 100 kW at 0.80 power factor, 600 volts, 60 cycles with a belt driven exciter rated a 10 kW, 125 volts. The generator and its exciter were built c1925.

Governor - The governor is a mechanical and hydraulic type believed to be a Holyoke brand built c1925.

SOURCES OF INFORMATION

Drawings

The attached drawings were reproduced from the Minor License Application for the Dayville Pond Hydroelectric Project by Summit Hydropower to the Federal Energy Regulatory Commission, Project No. 11168, dated July 19, 1991. These drawings depict features as they exist in 1993. There are no other known drawings of the facility.

Interviews

Johan Starrenburg, Vice President of Operations, William Prym, Inc., interviewed by Duncan S. Broatch throughout 1991, regarding the operation of the facility during Prym's ownership (1939-present).

Michael Woznicki, (former) Facilities Engineer, William Prym, Inc., interviewed by Duncan S. Broatch throughout 1991, regarding the operation of the facility during Prym's ownership (1939-present).

Robert Miller, local historian. Interviewed by Duncan S. Broatch throughout 1991 regarding site history (early 1800's - 1939).

BIBLIOGRAPHY

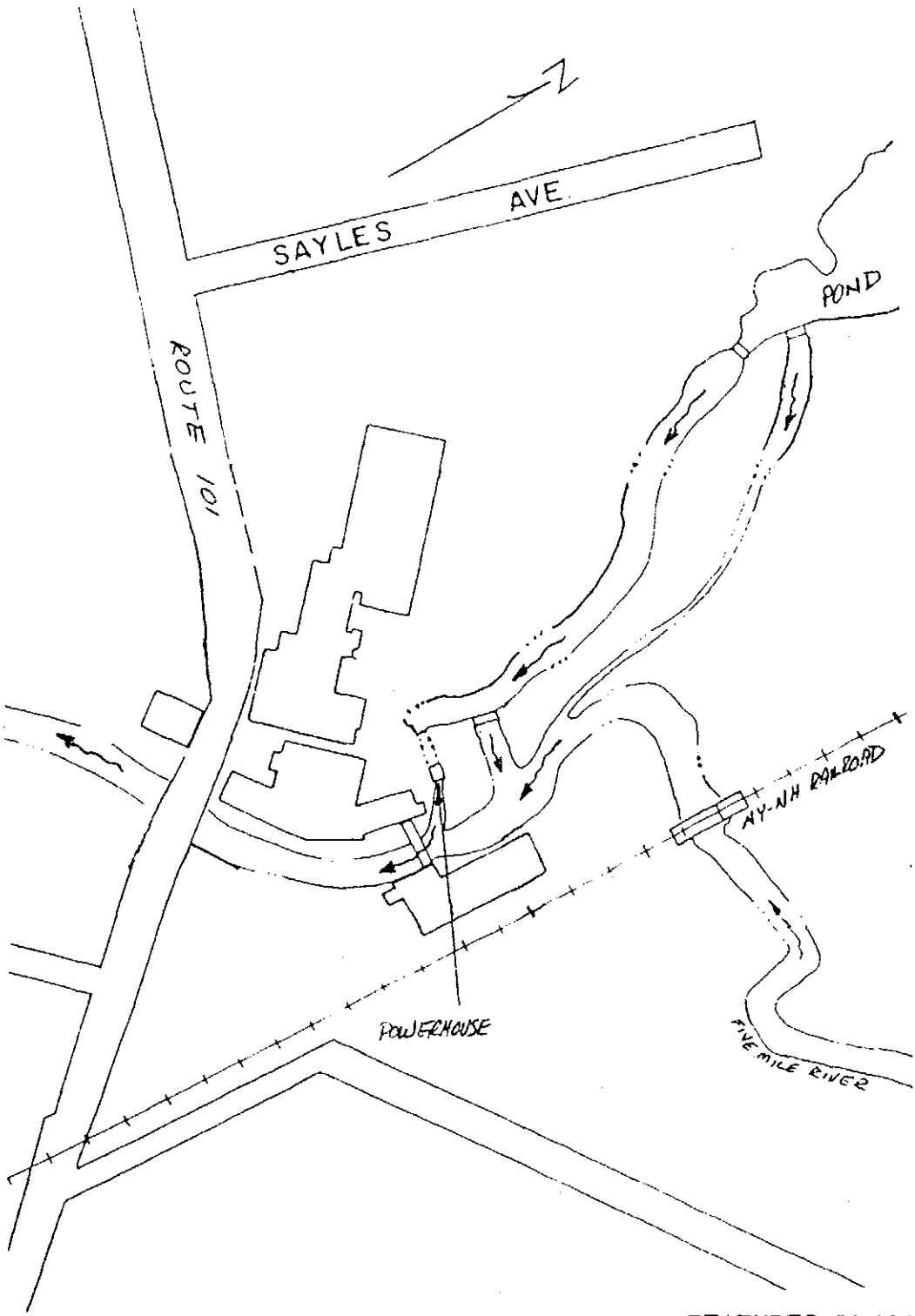
Bayles, Richard M.
1889 History of Windham County, Connecticut, New York: W.W. Preston and Co.

William K. Pike & Son
1947 Survey and title search performed by William K. Pike & Son, Civil Engineers and Surveyors, Danielson, CT for William Prym, Inc., Mss. on file Summit Hydropower

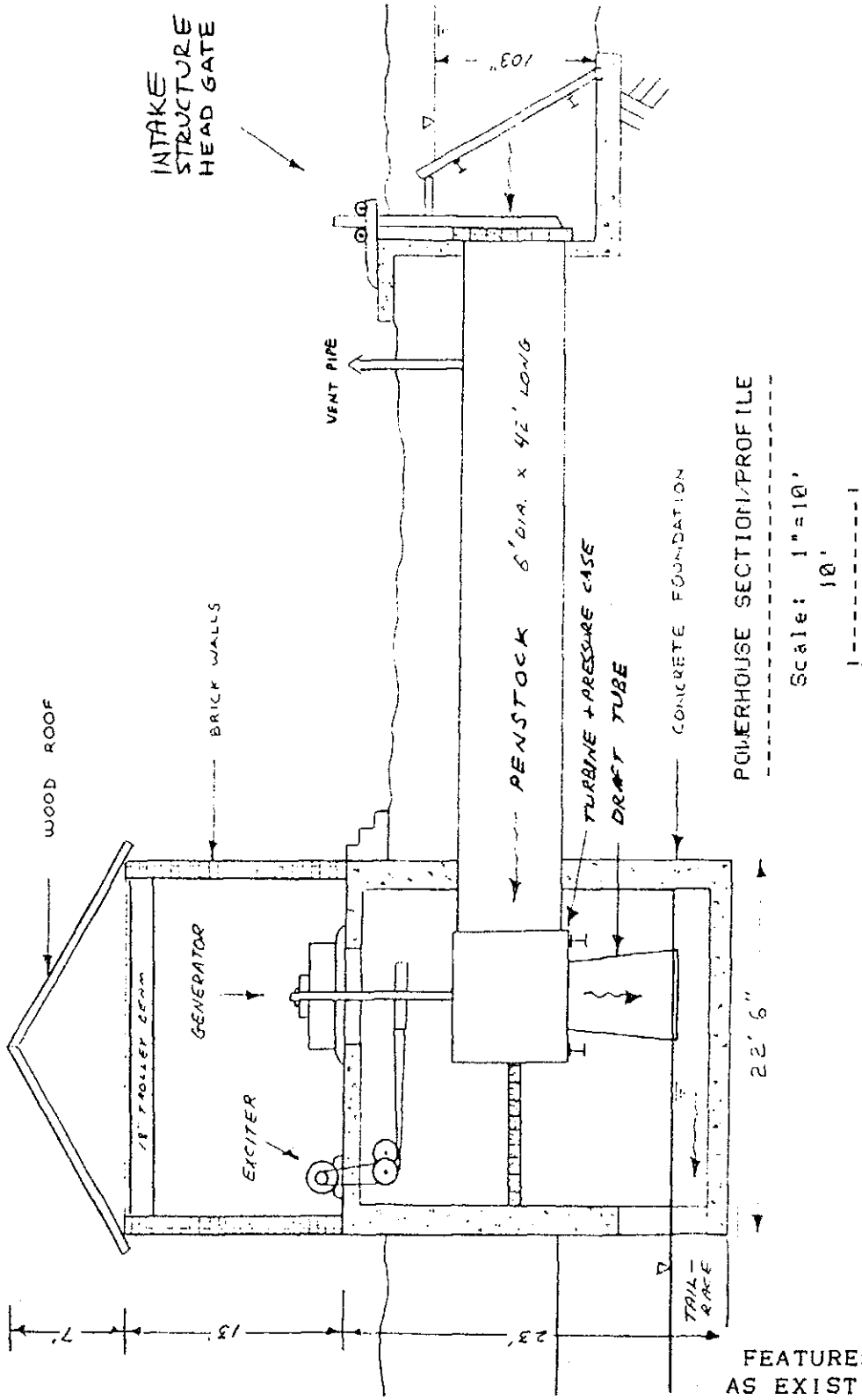
Summit Hydropower
1991 Minor License Application for the Dayville Pond Hydroelectric Project by Summit Hydropower to the Federal Energy Regulatory Commission, Project No. 11168, dated July 19, 1991, Mss. on file Summit Hydropower.

The Hercules Turbine Water Wheel
c1920 Catalog Number Thirteen, The Hercules Turbine Water Wheel, Holyoke Machine Company, Holyoke, Massachusetts, U.S.A., Mss. on file Summit Hydropower.

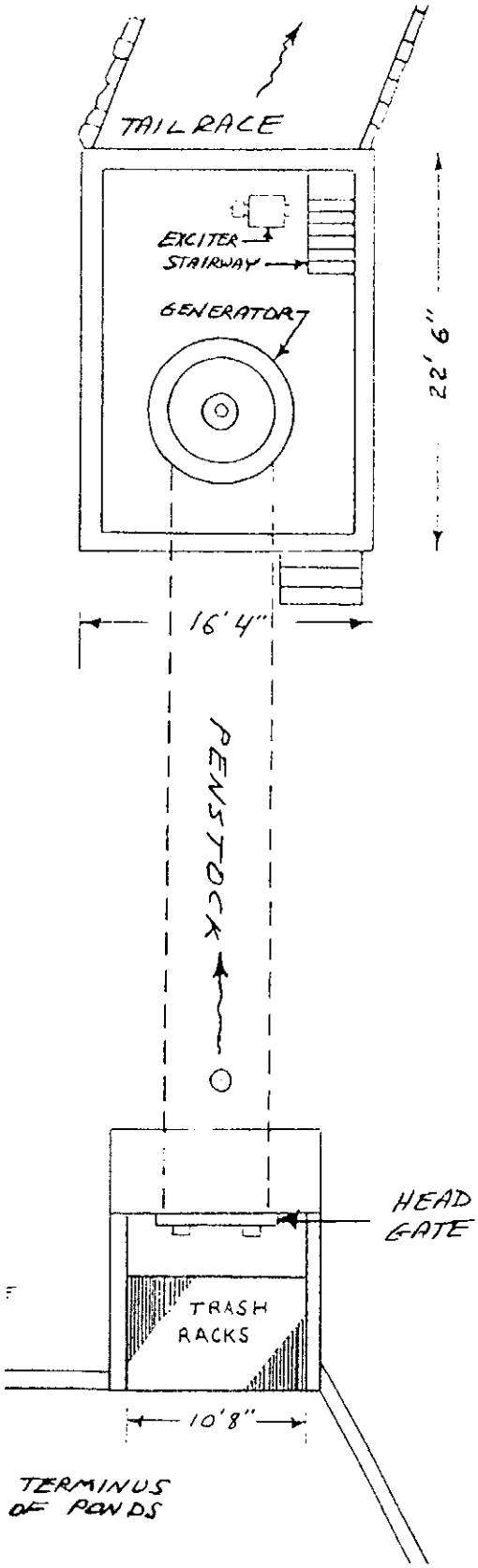
Roth, M.W.
1980 NAER Inventory for Dayville Mills, Windham County, Connecticut.

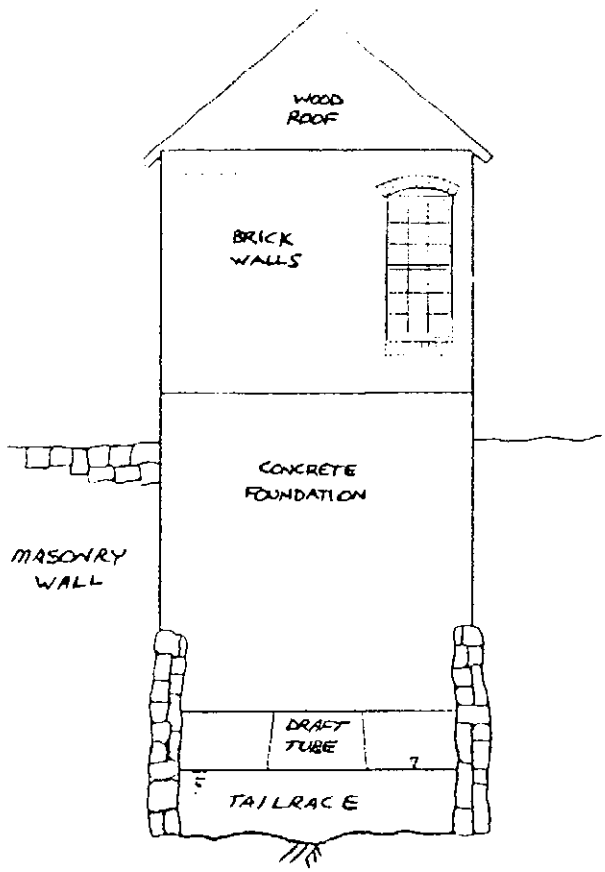


FEATURES DEPICTED
AS EXISTING IN 1991.



FEATURES DEPICTED AS EXISTING IN 1991.





POWERHOUSE PLAN AND ELEVATION

Scale: 1"=10'
10'
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FEATURES DEPICTED AS EXISTING IN 1991.